M

M-EARTS-
(See MICRO-EN ROUTE AUTOMATED RADAR TRACKING SYSTEM.)

MAA-
(See MAXIMUM AUTHORIZED ALTITUDE.)

MACH NUMBER- The ratio of true airspeed to the speed of sound; e.g., MACH .82, MACH 1.6.
(See AIRSPEED.)

MACH TECHNIQUE [ICAO]- Describes a control technique used by air traffic control whereby turbojet aircraft operating successively along suitable routes are cleared to maintain appropriate MACH numbers for a relevant portion of the en route phase of flight. The principle objective is to achieve improved utilization of the airspace and to ensure that separation between successive aircraft does not decrease below the established minima.

MAHWP- Missed Approach Holding Waypoint

MAINTAIN-

a. Concerning altitude/flight level, the term means to remain at the altitude/flight level specified. The phrase "climb and" or "descend and" normally precedes "maintain" and the altitude assignment; e.g., "descend and maintain 5,000."

b. Concerning other ATC instructions, the term is used in its literal sense; e.g., maintain VFR.

MAINTENANCE PLANNING FRICTION LEVEL- The friction level specified in AC 150/5320-12, Measurement, Construction, and Maintenance of Skid Resistant Airport Pavement Surfaces, which represents the friction value below which the runway pavement surface remains acceptable for any category or class of aircraft operations but which is beginning to show signs of deterioration. This value will vary depending on the particular friction measurement equipment used.

MAKE SHORT APPROACH- Used by ATC to inform a pilot to alter his traffic pattern so as to make a short final approach.
(See TRAFFIC PATTERN.)

MANDATORY ALTITUDE- An altitude depicted on an instrument Approach Procedure Chart requiring the aircraft to maintain altitude at the depicted value.

MAP-
(See MISSED APPROACH POINT.)

MARKER BEACON- An electronic navigation facility transmitting a 75 mHz vertical fan or boneshaped radiation pattern. Marker beacons are identified by their modulation frequency and keying code, and when received by compatible airborne equipment, indicate to the pilot, both aurally and visually, that he is passing over the facility.
(See OUTER MARKER.)
(See MIDDLE MARKER.)
(See INNER MARKER.)
(Refer to AIM.)

MARSA-
(See MILITARY AUTHORITY ASSUMES RESPONSIBILITY FOR SEPARATION OF AIRCRAFT.)

MAWP- Missed Approach Waypoint

MAXIMUM AUTHORIZED ALTITUDE- A published altitude representing the maximum usable altitude or flight level for an airspace structure or route segment. It is the highest altitude on a Federal airway, jet route, area navigation low or high route, or other direct route for which an MEA is designated in Part 95 at which adequate reception of navigation aid signals is assured.

MAYDAY- The international radiotelephony distress signal. When repeated three times, it indicates imminent and grave danger and that immediate assistance is requested.
(See PAN-PAN-PAN.)
(Refer to AIM.)

MCA-
(See MINIMUM CROSSING ALTITUDE.)

MDA-
(See MINIMUM DESCENT ALTITUDE.)

MEA-
(See MINIMUM EN ROUTE IFR ALTITUDE.)

METEOROLOGICAL IMPACT STATEMENT- An unscheduled planning forecast describing conditions expected to begin within 4 to 12 hours which may impact the flow of air traffic in a specific center's (ARTCC) area.

METER FIX TIME/SLOT TIME- A calculated time to depart the meter fix in order to cross the vertex at the ACLT. This time reflects descent speed adjustment and

any applicable time that must be absorbed prior to crossing the meter fix.

METER LIST DISPLAY INTERVAL- A dynamic parameter which controls the number of minutes prior to the flight plan calculated time of arrival at the meter fix for each aircraft, at which time the TCLT is frozen and becomes an ACLT; i.e., the VTA is updated and consequently the TCLT modified as appropriate until frozen at which time updating is suspended and an ACLT is assigned. When frozen, the flight entry is inserted into the arrival sector's meter list for display on the sector PVD/MDM. MLDI is used if filed true airspeed is less than or equal to freeze speed parameters (FSPD).

METERING- A method of time-regulating arrival traffic flow into a terminal area so as not to exceed a predetermined terminal acceptance rate.

METERING AIRPORTS- Airports adapted for metering and for which optimum flight paths are defined. A maximum of 15 airports may be adapted.

METERING FIX- A fix along an established route from over which aircraft will be metered prior to entering terminal airspace. Normally, this fix should be established at a distance from the airport which will facilitate a profile descent 10,000 feet above airport elevation [AAE] or above.

METERING POSITION(S)- Adapted PVD's/MDM's and associated "D" positions eligible for display of a metering position list. A maximum of four PVD's/MDM's may be adapted.

METERING POSITION LIST- An ordered list of data on arrivals for a selected metering airport displayed on a metering position PVD/MDM.

MFT-
(See METER FIX TIME/SLOT TIME.)

MHA-
(See MINIMUM HOLDING ALTITUDE.)

MIA-
(See MINIMUM IFR ALTITUDES.)

MICROBURST- A small downburst with outbursts of damaging winds extending 2.5 miles or less. In spite of its small horizontal scale, an intense microburst could induce wind speeds as high as 150 knots
(Refer to AIM.)

MICRO-EN ROUTE AUTOMATED RADAR TRACKING SYSTEM (M-EARTS)- An automated radar and radar beacon tracking system capable of employing both short-range (ASR) and long-range (ARSR) radars. This microcomputer driven system provides improved tracking, continuous data recording, and use of full digital radar displays.

MICROWAVE LANDING SYSTEM- A precision instrument approach system operating in the microwave spectrum which normally consists of the following components:

a. Azimuth Station.

b. Elevation Station.

c. Precision Distance Measuring Equipment.
(See MLS CATEGORIES.)

MIDDLE COMPASS LOCATOR-
(See COMPASS LOCATOR.)

MIDDLE MARKER- A marker beacon that defines a point along the glideslope of an ILS normally located at or near the point of decision height (ILS Category I). It is keyed to transmit alternate dots and dashes, with the alternate dots and dashes keyed at the rate of 95 dot/dash combinations per minute on a 1300 Hz tone, which is received aurally and visually by compatible airborne equipment.
(See MARKER BEACON.)
(See INSTRUMENT LANDING SYSTEM.)
(Refer to AIM.)

MID RVR-
(See VISIBILITY.)

MILES-IN-TRAIL- A specified distance between aircraft, normally, in the same stratum associated with the same destination or route of flight.

MILITARY AUTHORITY ASSUMES RESPONSIBILITY FOR SEPARATION OF AIRCRAFT- A condition whereby the military services involved assume responsibility for separation between participating military aircraft in the ATC system. It is used only for required IFR operations which are specified in letters of agreement or other appropriate FAA or military documents.

MILITARY OPERATIONS AREA-
(See SPECIAL USE AIRSPACE.)

MILITARY TRAINING ROUTES- Airspace of defined vertical and lateral dimensions established for the conduct of military flight training at airspeeds in excess of 250 knots IAS.
(See IFR MILITARY TRAINING ROUTES.)
(See VFR MILITARY TRAINING ROUTES.)

MINIMA-
(See MINIMUMS.)

MINIMUM CROSSING ALTITUDE- The lowest altitude at certain fixes at which an aircraft must cross when proceeding in the direction of a higher minimum en route IFR altitude (MEA).

(See MINIMUM EN ROUTE IFR ALTITUDE.)

MINIMUM DESCENT ALTITUDE- The lowest altitude, expressed in feet above mean sea level, to which descent is authorized on final approach or during circle-to-land maneuvering in execution of a standard instrument approach procedure where no electronic glideslope is provided.

(See NONPRECISION APPROACH PROCEDURE.)

MINIMUM EN ROUTE IFR ALTITUDE- The lowest published altitude between radio fixes which assures acceptable navigational signal coverage and meets obstacle clearance requirements between those fixes. The MEA prescribed for a Federal airway or segment thereof, area navigation low or high route, or other direct route applies to the entire width of the airway, segment, or route between the radio fixes defining the airway, segment, or route.

(Refer to Part 91.)

(Refer to Part 95.)

(Refer to AIM.)

MINIMUM FRICTION LEVEL- The friction level specified in AC 150/5320-12, Measurement, Construction, and Maintenance of Skid Resistant Airport Pavement Surfaces, that represents the minimum recommended wet pavement surface friction value for any turbojet aircraft engaged in LAHSO. This value will vary with the particular friction measurement equipment used.

MINIMUM FUEL- Indicates that an aircraft's fuel supply has reached a state where, upon reaching the destination, it can accept little or no delay. This is not an emergency situation but merely indicates an emergency situation is possible should any undue delay occur.

(Refer to AIM.)

MINIMUM HOLDING ALTITUDE- The lowest altitude prescribed for a holding pattern which assures navigational signal coverage, communications, and meets obstacle clearance requirements.

MINIMUM IFR ALTITUDES- Minimum altitudes for IFR operations as prescribed in Part 91. These altitudes are published on aeronautical charts and prescribed in Part 95 for airways and routes, and in Part 97 for standard instrument approach procedures. If no applicable minimum altitude is prescribed in FAR 95 or FAR 97, the following minimum IFR altitude applies:

a. In designated mountainous areas, 2,000 feet above the highest obstacle within a horizontal distance of 4 nautical miles from the course to be flown; or

b. Other than mountainous areas, 1,000 feet above the highest obstacle within a horizontal distance of 4 nautical miles from the course to be flown; or

c. As otherwise authorized by the Administrator or assigned by ATC.

(See MINIMUM EN ROUTE IFR ALTITUDE.)

(See MINIMUM OBSTRUCTION CLEARANCE ALTITUDE.)

(See MINIMUM CROSSING ALTITUDE.)

(See MINIMUM SAFE ALTITUDE.)

(See MINIMUM VECTORING ALTITUDE.)

(Refer to Part 91.)

MINIMUM NAVIGATION PERFORMANCE SPECIFICATION- A set of standards which require aircraft to have a minimum navigation performance capability in order to operate in MNPS designated airspace. In addition, aircraft must be certified by their State of Registry for MNPS operation.

MINIMUM NAVIGATION PERFORMANCE SPECIFICATION AIRSPACE- Designated airspace in which MNPS procedures are applied between MNPS certified and equipped aircraft. Under certain conditions, non-MNPS aircraft can operate in MNPSA. However, standard oceanic separation minima is provided between the non-MNPS aircraft and other traffic. Currently, the only designated MNPSA is described as follows:

a. Between FL 285 and FL 420;

b. Between latitudes 27°N and the North Pole;

c. In the east, the eastern boundaries of the CTA's Santa Maria Oceanic, Shanwick Oceanic, and Reykjavik;

d. In the west, the western boundaries of CTA's Reykjavik and Gander Oceanic and New York Oceanic excluding the area west of 60°W and south of 38°30'N.

MINIMUM OBSTRUCTION CLEARANCE ALTITUDE- The lowest published altitude in effect between radio fixes on VOR airways, off-airway routes, or route segments which meets obstacle clearance requirements for the entire route segment and which assures acceptable navigational signal coverage only within 25 statute (22 nautical) miles of a VOR.

(Refer to Part 91.)

(Refer to Part 95.)

MINIMUM RECEPTION ALTITUDE- The lowest altitude at which an intersection can be determined.

(Refer to Part 95.)

MINIMUM SAFE ALTITUDE-

a. The minimum altitude specified in Part 91 for various aircraft operations.

b. Altitudes depicted on approach charts which provide at least 1,000 feet of obstacle clearance for emergency use within a specified distance from the navigation facility upon which a procedure is predicated. These altitudes will be identified as Minimum Sector Altitudes or Emergency Safe Altitudes and are established as follows:

1. Minimum Sector Altitudes. Altitudes depicted on approach charts which provide at least 1,000 feet of obstacle clearance within a 25-mile radius of the navigation facility upon which the procedure is predicated. Sectors depicted on approach charts must be at least 90 degrees in scope. These altitudes are for emergency use only and do not necessarily assure acceptable navigational signal coverage.

(See ICAO term Minimum Sector Altitude.)

2. Emergency Safe Altitudes. Altitudes depicted on approach charts which provide at least 1,000 feet of obstacle clearance in nonmountainous areas and 2,000 feet of obstacle clearance in designated mountainous areas within a 100-mile radius of the navigation facility upon which the procedure is predicated and normally used only in military procedures. These altitudes are identified on published procedures as "Emergency Safe Altitudes."

MINIMUM SAFE ALTITUDE WARNING- A function of the ARTS III computer that aids the controller by alerting him when a tracked Mode C- equipped aircraft is below or is predicted by the computer to go below a predetermined minimum safe altitude.

(Refer to AIM.)

MINIMUM SECTOR ALTITUDE [ICAO]- The lowest altitude which may be used under emergency conditions which will provide a minimum clearance of 300 m (1,000 feet) above all obstacles located in an area contained within a sector of a circle of 46 km (25 NM) radius centered on a radio aid to navigation.

MINIMUMS- Weather condition requirements established for a particular operation or type of operation; e.g., IFR takeoff or landing, alternate airport for IFR flight plans, VFR flight, etc.

(See LANDING MINIMUMS.)

(See IFR TAKEOFF MINIMUMS AND DEPARTURE PROCEDURES.)

(See VFR CONDITIONS.)

(See IFR CONDITIONS.)

(Refer to Part 91.)

(Refer to AIM.)

MINIMUM VECTORING ALTITUDE- The lowest MSL altitude at which an IFR aircraft will be vectored by a radar controller, except as otherwise authorized for radar approaches, departures, and missed approaches. The altitude meets IFR obstacle clearance criteria. It may be lower than the published MEA along an airway or J-route segment. It may be utilized for radar vectoring only upon the controller's determination that an adequate radar return is being received from the aircraft being controlled. Charts depicting minimum vectoring altitudes are normally available only to the controllers and not to pilots.

(Refer to AIM.)

MINUTES-IN-TRAIL- A specified interval between aircraft expressed in time. This method would more likely be utilized regardless of altitude.

MIS-

(See METEOROLOGICAL IMPACT STATEMENT.)

MISSED APPROACH-

a. A maneuver conducted by a pilot when an instrument approach cannot be completed to a landing. The route of flight and altitude are shown on instrument approach procedure charts. A pilot executing a missed approach prior to the Missed Approach Point (MAP) must continue along the final approach to the MAP. The pilot may climb immediately to the altitude specified in the missed approach procedure.

b. A term used by the pilot to inform ATC that he is executing the missed approach.

c. At locations where ATC radar service is provided, the pilot should conform to radar vectors when provided by ATC in lieu of the published missed approach procedure.

(See MISSED APPROACH POINT.)

(Refer to AIM.)

MISSED APPROACH POINT- A point prescribed in each instrument approach procedure at which a missed

approach procedure shall be executed if the required visual reference does not exist.

(See MISSED APPROACH.)

(See SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE.)

MISSED APPROACH PROCEDURE [ICAO]- The procedure to be followed if the approach cannot be continued.

MISSED APPROACH SEGMENT-

(See SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE.)

MLDI-

(See METER LIST DISPLAY INTERVAL.)

MLS-

(See MICROWAVE LANDING SYSTEM.)

MLS CATEGORIES-

a. MLS Category I. An MLS approach procedure which provides for an approach to a height above touchdown of not less than 200 feet and a runway visual range of not less than 1,800 feet.

b. MLS Category II. Undefined until data gathering/ analysis completion.

c. MLS Category III. Undefined until data gathering/ analysis completion.

MM-

(See MIDDLE MARKER.)

MNPS-

(See MINIMUM NAVIGATION PERFORMANCE SPECIFICATION.)

MNPSA-

(See MINIMUM NAVIGATION PERFOR- MANCE SPECIFICATION AIRSPACE.)

MOA-

(See MILITARY OPERATIONS AREA.)

MOCA-

(See MINIMUM OBSTRUCTION CLEARANCE ALTITUDE.)

MODE- The letter or number assigned to a specific pulse spacing of radio signals transmitted or received by ground interrogator or airborne transponder components of the Air Traffic Control Radar Beacon System (ATCRBS). Mode A (military Mode 3) and Mode C (altitude reporting) are used in air traffic control.

(See TRANSPONDER.)

(See INTERROGATOR.)

(See RADAR.)

(Refer to AIM.)

(See ICAO term MODE.)

MODE (SSR MODE) [ICAO]- The letter or number assigned to a specific pulse spacing of the interrogation signals transmitted by an interrogator. There are 4 modes, A, B, C and D specified in Annex 10, corresponding to four different interrogation pulse spacings.

MODE C INTRUDER ALERT- A function of certain air traffic control automated systems designed to alert radar controllers to existing or pending situations between a tracked target (known IFR or VFR aircraft) and an untracked target (unknown IFR or VFR aircraft) that requires immediate attention/action.

(See CONFLICT ALERT.)

MONITOR- (When used with communication transfer) listen on a specific frequency and stand by for instructions. Under normal circumstances do not establish communications.

MONITOR ALERT (MA)- A function of the ETMS that provides traffic management personnel with a tool for predicting potential capacity problems in individual operational sectors. The MA is an indication that traffic management personnel need to analyze a particular sector for actual activity and to determine the required action(s), if any, needed to control the demand.

MONITOR ALERT PARAMETER (MAP)- The number designated for use in monitor alert processing by the ETMS. The MAP is designated for each operational sector for increments of 15 minutes.

MOVEMENT AREA- The runways, taxiways, and other areas of an airport/heliport which are utilized for taxiing/hover taxiing, air taxiing, takeoff, and landing of aircraft, exclusive of loading ramps and parking areas. At those airports/heliports with a tower, specific approval for entry onto the movement area must be obtained from ATC.

(See ICAO term MOVEMENT AREA.)

MOVEMENT AREA [ICAO]- That part of an aerodrome to be used for the takeoff, landing and taxiing of aircraft, consisting of the maneuvering area and the apron(s).

MOVING TARGET INDICATOR- An electronic device which will permit radar scope presentation only

from targets which are in motion. A partial remedy for ground clutter.

MRA-
(See MINIMUM RECEPTION ALTITUDE.)

MSA-
(See MINIMUM SAFE ALTITUDE.)

MSAW-
(See MINIMUM SAFE ALTITUDE WARNING.)

MTI-
(See MOVING TARGET INDICATOR.)

MTR-
(See MILITARY TRAINING ROUTES.)

MULTICOM- A mobile service not open to public correspondence used to provide communications essential to conduct the activities being performed by or directed from private aircraft.

MULTIPLE RUNWAYS- The utilization of a dedicated arrival runway(s) for departures and a dedicated departure runway(s) for arrivals when feasible to reduce delays and enhance capacity.

MVA-
(See MINIMUM VECTORING ALTITUDE.)